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GenCore version 5.1.3
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OM nucleic - nucleic search, using sw model Run on:

December 6, 2002, 19:53:16 ; Search time 2690 Seconds (without alignments) 16498.803 Million cell updates/sec 1 tctagaccatgtctggaaag......ccaactcagaagtagtcgac 1525 US-10-025-514-7 Perfect score: Seguence:

IDENTITY\_NUC Gapop 10.0 , Gapext 1.0 Scoring table:

2054640 seqs, 14551402878 residues

4109280 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Maximum Match 100% Listing first 45 summaries Post-processing: Minimum Match 0%

gb\_ro:\* gb\_sts:\* gb\_ba:\*
gb\_htg:\*
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gb\_ph:\* gb\_sy:\* gb\_un:\* gb\_v1:\* gb\_pr:\* GenEmbl:\* Database :

em\_fun:\* em\_hum:\* em\_in:\*

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em\_htgo\_other:\*

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

E00195 CDNA encodi 104196 Sequence 3 10472 Sequence 1 107849 Sequence 2 AX019486 Sequence A£130068 Homo sap1 J02619 Human 2 typ I02398 Sequence 8 BC015642 Homo sap1 Af113676 Homo sap1 M32247 Rat alpha-1 S77822 alpha-1-ant D00675 Rat mRRA fo AB000546 ramias si E13268 ramias asia X63129 B.taurus mR ARII1411 Sequence M11465 Human alpha E00631 DNA encodin I02706 Sequence 1 BC011991 Homo sapt AX335339 Sequence K01396 Human alpha AX335338 Sequence X01683 Human mRNA AR111410 Sequence 107949 Sequence 2 100556 Sequence 2 100556 Sequence 2 100509 Sequence 6 107947 Sequence 6 101227 Sequence 101227 Sequence 2 A01846 Human mRNA AX202089 Sequence 13616 Sequence 13616 Sequence 118616 Sequence 12611566 Sequence 18611566 Sequence 1861 AB000552 Callosciu AK026174 Homo sapi E00195 cDNA encodi AR111412 Sequence X88780 S.scrofa mR Description SUMMARIES AF113676 AR111410 AF130068 HUMA1AT2 RATA1PI AB000546 E13268 I01352 BABA1ATA AB004044 AX202089 SSANTIELA RATATRA1 AX019486 BC015642 AB00055( **HUMA1ATM** AK026174 AX472008 877822 Query Match Length DB Score 433.2 433.2 431.6 431.6 431.6 431.6 431.6 433.2 433.2 426.8 418.4 411.2 408.8 407.2 386.8 378 377.4 376.4 375.6 375.6 401.4 436. 

## ALIGNMENTS

PAT 14-FEB-2001 M Unclassified.
Unclassified.
E 1 (bases 1 to 1308)
RS SLILIEf.T.D. and Rodriguez,R.L.
Production of .alpha. .sub.1 -antitrypsin in plants
AAL Patent: US 6127145-A 6 03-0CT-2000;
Location/Qualifiers linear 1308 bp Sequence 6 from patent US 6127145. AR111412 AR111412.1 GI:12828260 Unknown. DEFINITION ORGANISM AUTHORS TITLE JOURNAL FEATURES ACCESSION REFERENCE RESULT 1 AR111412 VERSION KEYWORDS SOURCE

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                                                                  Length 1308;
                                                                                                Indels
                                                                                Pred. No. 2.1e-125;
0; Mismatches 346;
                                                                    Score 630.4; DB 6;
Pred. No. 2.1e-125;
                          202
          /organism="unknown"
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70.8%;
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                                                                             1415 ICCACCAGAAGTTAAATTAATAAACCAITCGITTTTCTGAIGAIGAGGAGAACACTAA 1474
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                             1076 cereacecageagecececereaacererecaagecearcaaageceargeagererecaar 1135
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1295 TGTTACTGAAGAAGCTCCATTAAAATTGAGTAAAGCTGTTCACAAAGCCGTCTTAACTAT 1354
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Sutliff, T.D. and Rodriguez, R.L.
Production of -alpha. .sub.1 -antitrypsin in plants
Patent: US 6127145-A 3 03-0CT-2000;
Location/Qualifiers
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                                                                                                                                                                                                           41.3%; Score 629.4; DB 6; 70.8%; Pred. No. 3.4e-125; tive 0; Mismatches 346;
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396 c 334 g
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                                                                                                                                                                                                                                /note="alpha-1-antitrypsin"
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59.9%; Pred. No. 5.8e
Live 0; Mismatches
                                                                                                                                                                                                                                                                                         /db_xref="GDB:G00-120-289"
                                                                                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
/map="14q32.1"
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/db_xref="GI:177827"
                                                                                             Location/Qualiflers
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Cillberto, G., Dente, L. and Cortese, R.
Cell-specific expression of a transfected human alpha 1-antitrypsin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRI 30-0CT-1994
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                                                                                                                                                                           996 ATGAAAAGACTGGGTATGTTCAATATTCAACATTGCAAAAAATTAAGTTCTTGGGTCTTA 1055
                                                                                                                                                                                                                                     1116 CAACATTTAGAGAATGAGTTGACTCATGACATTATTACTAAATTTTTAGAGAACGAGGAT 1175
                                                                                                                                                                                                                                                                                                                                                                                                                     1021 GACGAGAAGGGGAGGGAAGCTGCCGGGGCCATGTTCCTGGAGGCCATCCCCATGTCCATC 1080
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                                                      876 GTCTTCGCACTAGTTAACTATTTTTTCAAGGGTAAGTGGGAACGTCCTTTCGAGGTT
                                                                                    541 Grefregegregreateractactertreaaggegaaggegecegregagge
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               936 AAAGATACTGAAGAAGATTTTCATGTTGATCAAGTTACTACTGTCAAAGTTCCAATG
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M11465
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/translation="MPSSVSWGILLAGLCCLVPVSLAEDPOGDAAQKTDTSHHDQDHP
TFNKITPNLAEFAFSLYRQLAHQSNSTNIFFSPVSIATAFAMLSLGTKADTHDEILEG
LNFNLTEIPEAQIHEGFQELLRTLNQPDSQLQLTTGNGLFLSEGLKLVDKFLEDVKKL
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PREVKUPTBDEDFHYDQVTTVVPWARKRCARNIOHCKKLSSWVLLAKYLGRATAIFF
LPDEGKLQHLENELTHDIITKFLENEDRRSASLHLPKLSITGTYDLKSVLGQLGITKV
FSNGADLSGVTEEAFLKLSKAVHKAVLTIDEKGTEAAGAMFLEAIPMSIPPEVKFNKP
FVFLMIEQNTKSPLEMGKVVNPTQK"
[2] sites; alpha-1-antitrypsin deficiency disease mutations. The Caraite Falls (a one base pair delection), Bellingham (a substitution) and Mattawa (a one base pair insertion) mutations all result in premature transcription termination.
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I (bases 1 to 1434)

Maagaretsuto, W.1. and Guren, H.K.

REGION SPECIFIC MUTATION INDUCTION IN ALPHA-1-ANTI-TRYPSIN

PASTOR: JP 1986012289-A 1 20-JAN-1986;

CHIMO JIENTEITSUKUSU INC
OS human
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PN JP 1986012289-A/1
PD 20-7AN-1986
PP 20-7AN-1985 JP 1985051553
PR 14-MAR-1984 US 84 589410, 07-MAR-1985 US 85 70
PR 14-MAR-1984 US 84 589410, 07-MAR-1985 US 85 70
PR 14-MAR-1984 US 84 589410, 07-MAR-1985 US 85 70
C12N15/OO, AGIRSJ/74, AGIRSJ/64, CO7H21/O4, CO7R15/04, PC
C12N21/OO, AGIRSJ/74, AGIRSJ/64, CO7H21/O4, CO7R15/04, PC
C12R21/02//ARIRSJ/04,
CC Strandedness: Both;
CC topology: Linear;
CC topology: Linear;
CC hypothetical: No;
CC *Source: tissue_type=liver;
FH Key
FT CDS *AOUTCE: Location/Qualifiers
FT TCDS *AOUTCE: Alpha-1 antitrypsin' FT
FT CDS *AOUTCE: Alpha-1 antitrypsin' FT
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/note='amino acid 342=Lys'
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/organism="Homo sapiens"
/db_xref="taxon:9606"
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                                                                                      AGATCGTTGACCTAGTTAAAGAATTAGATCGTGATACCGTCTTCGCACTAGTTAACTATA 897
                                                                                                      921 CCCACGATATCATCACCAAGTTCCTGGAAAATGAAGACAGAAGGTCTGCCAGCTTACATT 980
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1547 - 16th Ave. East; Seattle, WA
Location/Qualifiers
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    (bases 1 to 1312)
    Kawasaki, G.H.

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BC011991
Homo sapiens, Similar to serine (or cysteine) proteinase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 1, clone most; 222 IMAGE:3859644, mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Web site: http://www.hgsc.bcm.tmc.edu/cdna/
Contact: villalon@bcm.tmc.edu.
Villalon, D.K., Luna, R.A., Hale, S.M., Hulyk, S., Lu, X., Garcia,
A.M., Holloway, M., Telford, B, Hodgson, A., Bouck, J., Yu, W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov series: TRAK Plate: 21 Row: d Column: 6 this clone was selected for full length sequencing because it passed the following selection criteria: matched mRNA g1: 6855600.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates; Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (30-JUL-2001) National Institutes of Health, Mammalian Gene Collection (MGC), Cancer Genomics Office, National Cancer Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                   1438 AACCATTCGTTTTTCTGATGATCGAGCAGAACACTAAAAGCCCCATTGTTTATGGGTAAGG 1497
1258 ITACCAAAGITITITCTAACGGTGCCGAITTGAGTGGTGTTACTGAAGAAGCTCCATTAA 1317
                                                                                                                                 1082 AGCTCTCCAAGGCCGTGCATAAGGCTGTGCTGACCATCGACGAGAAAGGGACTGAAGCTG 1141
                                                                                       1318 AATTGAGTAAAGCTGTTCACAAAGCCGTCTTAACTATTGATGAAAAGGGTACCGAGGCCG 1377
                                                                                                                                                                               CCGGCGCTATGTTCCTGGAAGCTATTCCAATGAGCATTCCACCAGAAGTTAAATTTAATA 1437
                                                                                                                                                                                                         1202 AACCCTTTGTCTTCTTAATGATTGAACAAAATACCAAGTCTCCCCTCTTCATGGGAAAAG 1261
                                              1022 TCACTAAGGTCTTCAGCAATGGGGCTGACCTCTCCGGGGTCACAGAGGAGGCACCCCTGA 1081
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/product="Similar to serine (or cysteine) proteinase
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/clone_lib="NIH_MGC_66"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NIH-MGC Project URL: http://mgc.nci.nih.gov
Contact: MGC help desk
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/db_xref="taxon:9606"
/clone="MGC:9222 IMAGE:3859644"
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1. .1584
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Tissue Procurement: DCTD/DTP
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Direct Submission
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/translation="messyswoilliaglccivpyslaedpogdaaQktdtshhdQdH
PTFNKTTPNLAEFAFSLYRQLAHQSNSTNIFFSPVSIATAFAMLSLGTKADTHDEILE
GLNFNLTEIPPAQIHEGFOELLRTLNQPDSQLCTTGNGET-SBGLKLVDKFLEDDYKK
ERPEVENCHTEBEDFHVDQYTPVYVPMKRLGMFNIQHCKKLSRDYLLAKYLGNATRIF
FLPDEGKLQHLBNELTHDIITKFLENBERRSASLHLPKLSITGTYDLKSVLGQLGITK
VFSNGADLSGYTEBEAPIKLSKAVHKNVLTIDEKGTERAGAMFLEAIPMSIPPEVKFNK
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inhibitor, clade A (alpha-1 antiproteinase, antitrypsin),
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1047 CCACCGCCATCTTCTTCCTGCTGATGAGGGGAAACTACAGCACCTGGAAAATGAACTCA 1106
                                       1138 CTCATGACATTATTACTAAATTTTTAGAGAACGAGGATCGTCGTAGCGCTTCTCTGCACC 1197
                                                                            1198 TGCCAAAGTTAAGTATCACCGGTACTTACGACTTAAAATCTGTTTTAGGCCAGTTAGGTA 1257
                                                                                             1258 TTACCAAAGTTTTTTCTAACGGTGCCGATTTGAGTGGTGTTACTGAAGAAGCTCCATTAA 1317
                                                                                                                                                         1227 TCACTAAGGTCTTCAGCAATGGGGCTGACCTCTCCGGGGTCACAGAAGGAGCACCCCTGA 1286
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Avalon Pharmaceuticals (US)
Location/Qualifiers
1. 1352
                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 5848 from Patent W00194629. AX335339
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/db_xref="taxon:9606"
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                                                                                                                                                                                                                                                                                                                   2 (bases 1 to 1352)
Colau,B., Chuchana,P. and Bollen,A.
Revised sequence of full-length complementary DNA coding for human
     PRI 01-NOV-1994
                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 1231)

Bollen,A., Herzooy,A., Cravador,A., Herion,P., Chuchana,P., Vander Straten,A., Loriau,R., Jacobs,P. and van Elsen,A.

Cloning and expression in Escherichia coli of full-length DNA 2 (4), 255-264 (1983)
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Courtney, M., Buchwalder, A., Tessier, L.H., Jaye, M., Benavente, A., Balland, A., Kohli, V., Lathe, R., Tolstoshev, P. and Lecocq, J.P. High-level production of biologically active human alpha l-antitrypsin in Escherichia coli 1. 669-673 (1984) Proc. Natl. Acad. Sci. U.S.A. 81 (3), 669-673 (1984)
                                                                            alpha-1-antitrypsin; antiprotease; antitrypsin.
Human liyer, cDNA to mRNA, clones pULB1523 [1] and pTG603 [3]
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           Human alpha-1-antitrypsin mRNA, complete cds.
K01396
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/organism="Homo sapiens"
/db_xref="taxon:9606"
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Young, P.E., Augustus, M., Carter, K.C., Ebner, R., Endress, G., Horrigan, S., Soppet, D.R. and Weaver, Z. Cancer gene determination and therapeutic screening using signature
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Mammalla; Eutherla; Primates; Catarrhini; Hominidae; Homo.
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EFFFWKNTFEEDFHVDQYTVVVPWRMKRLGMFNIQHCKKLSSWYLLMKYLGNATAIF
FLPDFGKLQHLENEITTHDIITKFLENEDRRSASLHLPKLSITGTYDLKSVLQQLGITK
VFSNGADLSGYTEEAPLKLSKAVHKAVLTIDEKGTEAAGAMFLEAIPMSIPPEVKFNK
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PTFNKITPNLAEFAFSLYRQLAHQSNSTNIFFSPVSIATAFAMLSLGTKADTHDEILE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. I bases 1 to 27%. Chandra, T. Degen, S.J., White, T.T., Marchioro, T.L., Woo, S.L. and Davie, E.W. Cloning and sequence of cDNA coding for alpha 1-antitrypsin Proc. Natl. Acad. Sci. U.S.A. 78 (11), 6826-6830 (1981) 82082539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rosenberg, S., Barr, P.J., Najarian, R.C. and Hallewell, R.A. Synthesis in yeast of a functional oxidation-resistant mutant of human alpha-antitrypsin Nature 312 (5989), 77-80 (1984) 85036645
                       1378 CCGGCGCTATGTTCCTGGAAGCTATTCCAATGAGCATTCCACCAGAAGTTAAATTTAATA 1437
                                                                                  1438 AACCATTCGTTTTTCTGATGATCGAGCAGAACACTAAAAGCCCATTGTTTATGGGTAAGG 1497
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/protein_id="CAA25838.1"
/db_xref="G1:28966"
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                                                                                                                                                                                                                                                                                                                                  Human mRNA for alpha 1-antitrypsin.
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Colau, B., Chuchana, P.
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                                                                                                                                                                                                          Length 1371;
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                                                                                                                                                                                                             Score 433.2; DB 9
Pred. No. 5.5e-83;
PFVFLMIEQNTKSPLFMGKVVNPTQK"
                                                                                                                                 340 g
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                                                                                                                                                                                                                28.4%;
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                                                                                                                                 388 c
                                                                                                                                                                                                                                               Best Local Similarity 59.7
Matches 729; Conservative
                            39. .110
111. .129
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ARNJAL14 11399 bp mRNA linear PRI 29-SEP-2000 Homo sapiens cDNA: FLJ22521 fis, clone HRC12386, highly similar to AFL13676 Homo sapiens clone FLB2803 PRO0684 mRNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (19-AUG-2000) Sumio Sugano, Institute of Medical Science, Submitted (19-AUG-2000) Sumio Sugano, Institute of Medical Science, University of Tokyo, Laboratory of Genome Structure Analysis, Human Genome Center; Shirokane-dal, 4-6-1, Minato-ku, Tokyo 108-8639, Japan (E-mail:cdnal@ims.u-tokyo.ac.jp, Tel:81-3-5449-5286,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 (sites)
Kawabata,A., Hikiji,T., Kobatake,N., Inagaki,H., Ikema,Y.,
Okamoto,S., Okitani,R., Ota,T., Suzuki,Y., Obayashi,M., Nishi,T.,
Shibahara,T., Tanaka,T., Nakamura,Y., Isogai,T. and Sugano,S.
NEDO human cDNA sequencing project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NEON human cDNA sequencing project supported by Ministry of International Trade and Industry of Japan; cDNA full insert sequencing: Research Association for Biotechnology; cDNA library construction, 5'- & 3'-end one pass sequencing: Departent of Virology and Human Genome Center, Institute of Medical Science, University of Tokyo (partly supported by Science and Technology
1258 TTACCAAAGTTTTTTTTAACGGTGCCGATTTGAGTGGTGTTACTGAAGAAGCTCCATTAA 1317
                                                                                                      1378 CCGGCGCTATGTTCCTGGAAGCTATTCCAATGAGCATTCCACCAGAAGTTAAATA 1437
                                                                                                                                                                                                                                                                                                    1213 AACCCTTTGTTCTTAATGATTGAACAAAATACCAAGTCTCCCCTTTCATGGGAAAAG 1272
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Shibahara, T., Tanaka, T. and Nakamura, Y.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                         AACCATTCGTTTTTCTGATGATCGAGCAGAACACTAAAAGCCCCATTGTTATGGGTAAGG 1497
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Oliyo Capping; fis (full insert sequence).
Homo sapiens primary human renal epithelial cells CDNA to mRNA,
clone_lib:HRC clone:HRC12386.
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/cell_type="primary human renal epithelial cells"
/clone_lib="HRC"
/note="cloning vector pME18SFL3"
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/db_xref="taxon:9606"
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                                                                         298 TGTGTGGTAAGTCCTGTTTCCCCAGTCAAGGCCATGGAAGACCCTCAAGGCGACGCCG 357
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PN JP 1984091886-A/1
PD 26-MAY-1984
PP 12-AUG-1983 JP 1983147907
PR 13-AUG-1982 US 82 408099, 28-APR-1983 US 83 489406 PI
GUREN EICHI KAMASAKI, RICHIYAADO UYSUDOBERII
PC C12N15/00,A61K35/72,A61K37/64,C0767/00,C07H21/04,C12N11/16, PC
                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
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                                              1378 CCGGCGCTATGTTCCTGGAAGCTATTCCAATGAGCATTCCACCAGAAGTTAAATTTAATA 1437
                                                                         1158 CTGGGGCCATGTTTTAGAGGCCATACCCATGTCTATCCCCCCGAGGTCAAGTTCAACA 1217
                                                                                                       AACCATTCGTTTTTCTGATGATGAGCAGAACACTAAAAGCCCATTGTTTATGGGTAAGG 1497
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Gueroh.E.K. and Richiyaado,U.
SUGAR LYSING FROMOTOR: PROTEASE INHIBITOR FOR DEVELOPMENT
ADJUSTED PROTEIN
                                                                                                                                      1218 AACCCTTTGTCTTCTTAATGATTGAACAAATACCAAGTCTCCCCTCTTCATGGGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                  Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
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47. .1303
UTR 1304. .1434
UTR 1. .1434
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47. .118
1_Lpeptide 47. .1300
Location/Qualifiers
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Pred. No. 5.5
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/organism="Homo sapiens"
/db_xref="taxon:9606"
1 432 c 340 g 293
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JP 1984091886-A/1.
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CAAATTTAGCCGAATTTGCTTTTTTTTTAGACAATTAGCTCATCAAAGTAATTCTA 477
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Parker, M.L. and Kawasaki, G.H.
Method of expressing alpha-1-antitrypsin in bacteria and its use in therapeutic formulations, and vectors and bacteria for such method and their productions, and vectors and bacteria for such method patent: EP 0137633-A1 3 17-APR-1985;
Location/Qualifiers
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Patent: EP 0139383-A1 1 02-MAY-1985;
                                        1018 ATATTCAACATTGCAAAAATTAAGTTCTTGGGTCTTATTAATGAAGTATTAGGTAACG 1077
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Russell, P.R.
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                        1221 AACCCTTTGTCTTCTTAATGATTGAACAAAATACCAAGTCTCCCCTCTTCATGGGAAAAG 1280
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Kawasaki, G.H. and Woodbury, R.G.
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